



## The Impact of Spending Time in Different Social Media Platforms on Urban Areas User's Specific Mental Health: Stress, Anxiety and Depression

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### Abstract

While extensive research in Western contexts has linked social media use to mental health outcomes, few studies have investigated quantified time spent across platforms in non-Western urban settings in South Asia. This study addresses this gap by examining the relationship between time spent on social media platforms (Facebook, YouTube, Instagram, TikTok) and mental health outcomes among urban young adults in Dhaka, Bangladesh. Using the Depression, Anxiety, and Stress Scale (DASS-21), quantitative data were collected from 322 participants aged 16–30, categorized into light (0–2 hours/day), moderate (2–6 hours/day), and heavy (>6 hours/day) social media users. Hypotheses proposed that increased social media use would correlate with heightened mental health symptoms. Results from one-way ANOVA revealed no significant differences in DASS-21 scores across usage groups ( $F(4, 317) = 1.376, p = .242$ ), and post hoc Tukey HSD tests confirmed no significant pairwise differences ( $p > .05$ ). However, significant positive correlations emerged between platforms, notably TikTok and Instagram ( $r = .315, p < .001$ ). These findings suggest no statistically meaningful link between social media usage time and mental health in this sample, contrasting with prior studies in Western contexts. Cultural factors, such as social connectivity in dense urban settings, may buffer negative effects. Methodological limitations, including self-reported usage and a cross-sectional design, highlight the need for longitudinal and mixed-methods research to explore nuanced interactions. This study contributes to the growing discourse on social media's mental health impacts, emphasizing context-specific investigations in non-Western populations.

### Keywords

social media usage, mental health, young adults, urban mental health, cross sectional study, dass-21

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## **Introduction**

Nowadays, we can't imagine a single day without social media. Social media refers to the websites and online tools that facilitate interactions between users by providing them opportunities to share information, opinions, and interests (Swar & Hameed, 2017). On a daily basis, individual between 12-25 years age engage with social media for many hours (Petropoulos Petalas et al., 2021). They use social media like Facebook, Instagram, YouTube, and TikTok every day. In 2016, 68% of all U.S. adults are facebook users, 28% use instagram, 26% use pinterest, 25% use linkedin and 21% use X (Lin et al., 2016). We depend on this platform for communicate with others and this platforms have a great impact for make connection with others but it can also lead to tremendous stress, pressure to compare oneself with others, and also increase sadness (Zsila & Reyes, 2023), and passive use of social media occurs anxiety and depression in adolescent (Thorisdottir, Ingibjorg E. et al., 2019). Social media is a distraction from real life (Shensa et al., 2021). These online platforms have both negative and positive effects on our mental health (Sadagheyani & Tatari, 2020) and this both effect have a great impact on child and teenagers mental well-being also (Reid Chassiakos et al., 2016). Social media use influences subjective well-being over time (Kross et al., 2013). It causes anxiety, tension, stress, and depression (Torre et al., 2020). We feel more mental illness after using these online communication platforms. The excessive use of social media can be related to depression and anxiety (Ulvi et al., 2022). When we post on social media we have tension for the amount of reactions and comments. It causes poor mental health (Beyari, 2023) and this is related to future symptoms of depression and anxiety (Steinsbekk et al., 2023). People are addicted to highly stimulated activities such as immersing themselves in social media which reduces the dopamine hormone and they lose self-control and want more stimulation (Meurisse, Thibaut, 2021). So they spend more time on social media. Uncontrolled, unhygienic, and compulsive usage of internet resources enhances loneliness (Kim, Junghyun & LaRose, Robert, 2009). That's why they can't focus on their work and daily life activities; then they feel loneliness, anxiety, or stress. When they use social media, they demand more and more stimulation to reduce dopamine and the stimulation is social media. So they regularly use social media which can contribute to anxiety related to the "fear of missing out" (Alonzo et al., 2021). As they demand more stimulation, their focus is increasingly geared toward the short term and their vision of reality becomes distorted. This leads them to adopt inaccurate mental models such as success should come quickly and easily or that they don't need to work hard to lose weight or make money (Meurisse, Thibaut, 2021). The use of social media also causes poor sleep (Alonzo et al., 2021) and cyber aggression (Tan, 2023); sleep is most important for public health (Yu et al., 2024). With the growth of social media use, there are also increasing worries that social media might lead to social anxiety in users (Jelenchick et al., 2013). Even, now people use social media's ML (Machine Learning) for measure one's mental health, because the data have in social media tell one's mental health condition (Skaik & Inkpen, 2020). Since 2013, researchers can assess major depression (Choudhury et al., 2013) (Tsugawa et al., 2015) (Reece & Danforth, 2017), suicidality (Coppersmith et al., 2016) (Burnap et al., 2015) (Shing et al., 2018), eating disorders (Chancellor et al., 2016) (Wang et al., 2017), and schizophrenia (Mitchell et al., 2015) by using social media data. It says social media is being used now for understanding mental health outcomes (Chancellor & De Choudhury, 2020) and we easily see the reason; people are fully depending on social media now and it have a negative effect on mental well-being, sometimes the effect is more dangerous that it make people suicidal (Twenge et al., 2018).

Research showed that people who spend more time on social media might be displaced from their most important activities that might be protective for mental health (Swar & Hameed, 2017), such as sleep or face-to-face time with friends (Twenge, 2017). Another research showed that spending time on social media is moderately related to anxiety and depression (there are some differences depending on the participant's sex) (Coyne et al., 2020). Even half of the sample of psychiatric patients are using social media (Trefflich et al., 2015). A study showed that spending time on social media makes adolescents suicidal and decreases empathy (Berryman et al., 2018). In Iceland, they suffer depression and anxiety from using social media (Thorisdottir, Ingibjorg E. et al., 2019). The US young adults also face depression for using



social media(Lin et al., 2016).

The previous study showed a relationship between social media and mental health (Coyne et al., 2020), social media and loneliness (Kim, Junghyun & LaRose, Robert, 2009), smartphone and brain function (Montag, Christian et al., 2021), adolescent mental well-being and social media (Kaur & Kaur, 2022). However, no study showed an association between specific mental health, use of different social media platforms and the spending time on social media. In our knowledge, there are no study exists examining the specific mental health conditions for spending time on social media platforms. Only one study we find that examine the specific mental health condition for spending time on social media (Baker, 2019). But in this study the sample size was soo short and they are just their University students. In Bangladesh, there has been no study on the relationship between spending time on social media and mental health, we found one research on the relationship between social media and academic performance in Bangladesh (Islam, MD. A. & Kumar, B., 2019). Guided by Social Comparison Theory (Festinger, 1954), this study hypothesizes that platform-specific features, such as Instagram's emphasis on visual perfection will exacerbate upward comparisons, leading to heightened anxiety and depression (Vogel et al., 2014). Conversely, platforms like TikTok, with diverse and often humorous content, may buffer these effects (Kross et al., 2021).

Social media use is increasing among us and it's association with mental well-being remains unclear. The purpose of this study is to show the relation between specific mental health and spending time on different social media platforms in a nationally urban areas representative sample of young adults. This study involves a large sample size and addresses the specific amount of time (See Table 1) that spends on social media.

The research question is, "What are the specific mental health outcomes associated with social media use? How do these outcomes vary across different platforms and amount of spending time on social media?"

We hypothesized that people who spend their time on social media more, have more anxiety, depression, and stress than others and this mental illness level is different according to different social media platforms.

## **Method**

### **Participant Selection**

322 participants were selected, representing different age groups, genders, and educational qualifications. This sample encompass a mix representing different social media platforms such as Facebook, Instagram, YouTube, and TikTok. We will take participants from Dhaka city, aged between 16-30, both male and female (N=322).

### **Sampling Procedure**

We implemented randomized sampling to ensure a diverse representation from various social media platforms.

### **Data Collection Procedure and Instruments**

We collect data with quantitative methods. To collect quantitative data, we used DASS-21 scale to measure three specific mental health problems; depression, anxiety, and stress. We used the bangle translated version of 21 questions Depression Anxiety Stress Scale. These scale is validated in the Bangla version (Alim et al., 2014). The participants who use social media for 0-2 hours are considered light users; those who use social media for 2-6 hours, they considered moderate users, and those who use social media for more than 6 hours are considered heavy users.

There were some extra questions for collect their demographic data like age, gender, educational qualification, spending time on social media, and the social media platform they use.

### **Data Analysis**

After collecting the data, we analyze the correlation between different social media and specific mental health. We use SPSS and Microsoft Excel to analyze the collected data. We use correlation and regression theory to find out the relationship between time spent on a certain social media platform and the level of depression, anxiety, and stress.

### **Ethical Considerations**

The research process was adhere to the standard ethical protocols, including ensuring participant confidentiality and obtaining informed consent. Emotional support was provided as needed to any



participant expressing distress during the study.

### **Result**

The study investigated the relationship between social media usage (Facebook, YouTube, Instagram, TikTok) and mental health outcomes (stress, anxiety, depression) measured by the DASS-21 scale among urban young adults in Dhaka, Bangladesh.

#### Descriptive Statistics

Table 1 summarizes the demographic profile and social media usage patterns of the 322 participants. The sample comprised 322 participants categorized into light (0–2 hours/day), moderate (2–6 hours/day), and heavy (>6 hours/day) social media users. Mean DASS-21 scores ranged from 27.75 (non-users) to 34.47 (heavy users), suggesting a nominal increase in mental health symptoms with higher usage, though differences were not statistically significant.

#### ANOVA and Post Hoc Tests

A one-way ANOVA revealed no significant differences in DASS-21 scores across social media usage groups ( $F(4, 317) = 1.376, p = .242$ ). Post hoc Tukey HSD tests confirmed no significant pairwise differences between groups (all  $p > .05$ ).

#### Regression Analysis

Linear regression models tested the predictive power of individual platforms on DASS-21 scores. No platform showed statistically significant associations (Facebook:  $B = 0.925, p = 0.173$ ; YouTube:  $B = -0.811, p = 0.310$ ; Instagram:  $B = 1.038, p = 0.110$ ; TikTok:  $B = -0.153, p = 0.860$ ).

#### Correlation Matrix

Significant correlations emerged between platforms, but none with DASS-21 (TikTok vs Instagram:  $r = .315, p < .001$ , Facebook vs Instagram:  $r = .177, p = .001$ , DASS-21 vs All platforms:  $r = -.040$  to  $.101, p > .05$ ).

### **Discussion**

This study found no statistically significant correlation between time spent on social media platforms (Facebook, YouTube, Instagram, TikTok) and mental health outcomes (stress, anxiety, depression) in a sample of urban Bangladeshi young adults. These results contrast with the hypothesis that increased social media use exacerbates mental health symptoms.

The lack of significance may reflect cultural or contextual factors. For example, social media's role in maintaining social connections in densely populated urban areas like Dhaka might buffer negative mental health effects. Strong correlations between platforms (e.g., TikTok-Instagram:  $r = .315$ ) suggest users engage with multiple platforms simultaneously, diluting platform-specific effects. The findings align with studies reporting weak or non-significant links between social media use and mental health in non-Western contexts (Ulvi et al., 2022; Sadagheyani & Tatari, 2020). However, they contradict research linking passive social media use to anxiety (Thorisdottir et al., 2019) or depression (Twenge et al., 2018). This discrepancy may stem from differences in measurement (e.g., categorizing "passive" vs. "active" use) or cultural norms around social comparison.

Platform-specific social media use predicts variations in stress, anxiety, and depression among young adults.

*Emotional distress patterns differ across Facebook, Instagram, and YouTube users.*

Findings suggest distinct cognitive-emotional processing linked to platform engagement.

**Implications for emotion regulation and mental health interventions in digital contexts.**

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### Appendix

Table 1 : Social Media Usage Categorization

Usage Category	Hours/Day	Platforms Considered
Light	0–2	Facebook, YouTube, Instagram, TikTok
Moderate	2–6	Facebook, YouTube, Instagram, TikTok
Heavy	>6	Facebook, YouTube, Instagram, TikTok

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#### Declaration of interests

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

The authors declare the following financial interests/personal relationships which may be considered as potential competing interests:

Md. Imon Hossain reports equipment, drugs, or supplies and writing assistance were provided by Dhaka College Psychology Society. Md. Imon Hossain reports a relationship with Dhaka College Psychology Society that includes: board membership. If there are other authors, they declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

#### Footnotes/Endnotes

1. **DASS-21 = Depression, Anxiety, and Stress Scale-21; used to measure symptoms of depression, anxiety, and stress among participants.**
2. **Social media usage categories:**
  - **Light users = 0–2 hours/day**
  - **Moderate users = 2–6 hours/day**
  - **Heavy users = >6 hours/day**
3. **Platforms considered: FB = Facebook, YT = YouTube, IG = Instagram, TT = TikTok.**
4. **All statistical tests were conducted at a significance level of  $\alpha = 0.05$ .**